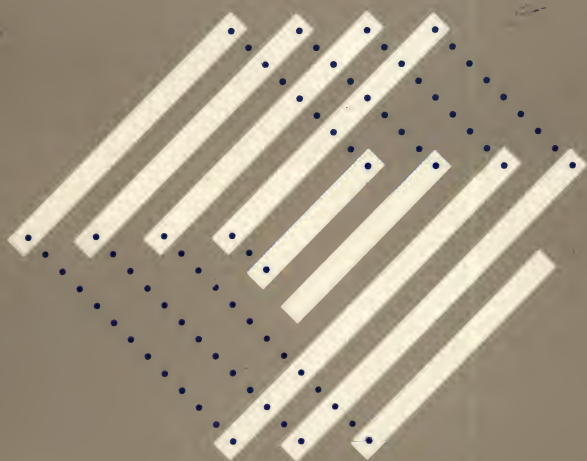


**ArchiveVP**  
**QIC stream™**

**Software User Manual**



**ARCHIVE®**  
**CORPORATION**



**ArchiveVP**  
**QIC stream™**

**Software User Manual**

**21755-001 A**

## Manual Part Number 21755-001 A

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## **CHAPTER 1 INTRODUCTION**

### **INTRODUCING QICstream**

QICstream is the backup utility software program that gives you complete control of your Archive cartridge tape drive.

With QICstream and the Archive drive installed in your system, you can back up all files on your hard disk, select individual files for backup, or let the program back up only the files which have changed since your last backup.

QICstream includes many valuable reliability features such as bad-sector mapping, powerful error-correction codes (ECC), and both automatic and menu-selectable verification of backed up files.

### **COMPATIBILITY**

QICstream is fully compatible with MS DOS and PC DOS operating systems, versions 2.0 and later, and requires a minimum of 256K RAM to operate.

## ABOUT THE QICstream MANUAL

This manual provides detailed installation and operating instructions for QICstream. For information concerning the hardware, the Archive tape drive and the tape cartridge, refer to your Archive tape drive Installation Manual.

In the rest of this manual:

- CHAPTER 2** provides detailed installation instructions for installing QICstream on your system.
- CHAPTER 3** explains the various conventions used in the text of the QICstream operating instructions.
- CHAPTER 4** explains the main features and functions of QICstream, such as using the QICstream control keys, making menu and file selections, and using the password protection feature.
- CHAPTER 5** provides the detailed QICstream operating instructions by describing each function on the menus.
- CHAPTER 6** lists the error messages that you might encounter and gives you some quick troubleshooting hints.
- APPENDIX A** provides operating instructions for QICstream use with the Novell network.
- APPENDIX B** provides operating instructions for QICstream use with the 3Com network.

## **CHAPTER 2 SOFTWARE INSTALLATION**

### **KNOW YOUR DOS**

The following installation instructions assume that you are familiar with DOS commands and syntax. If you are not, then refer to your MS-DOS/PC-DOS manual, especially the sections on creating directories; copying files; CONFIG.SYS and AUTOEXEC.BAT files; and DATE, TIME, and PATH commands.

### **ABOUT CARTRIDGE LOADING**

Cartridge loading is discussed and illustrated in the Installation Manual, but the following two precautions must also be observed:

**Do not have a cartridge loaded in the tape drive at system power-on (or system reset).**

**Never leave a cartridge in the tape drive when the system is not in use.**

## SETUP

### Loading the Program

QICstream is contained on a single diskette which is packaged with your Archive tape drive.

The QICstream diskette contains two executable files QSV.EXE & QSVMOD.EXE

To load QICstream:

- > Insert the QICstream diskette into your diskette drive.
- > Create a directory in the root directory on your hard disk (examples: UTILITY, BACKUP, QICSTRM, QICBACK) and copy QSV.EXE & QSVMOD.EXE from the QICstream diskette to the new directory.
- > Remove the QICstream diskette and store it in a safe place. Do not work from this diskette.



- > Make a working copy of QICstream by copying the QICstream files, QSV.EXE & QSVMOD.EXE, from your hard disk to a blank diskette. Store this working copy for future use.

**File Description:**

QSV.EXE = Executable file

QSVMOD.EXE = Installation file used for modifying base port address, interrupt request and DMA channel if needed (This file must be operated if jumpers on the controller board are changed.)

## Using AUTOEXEC.BAT

If you don't have an AUTOEXEC.BAT file in your root directory, you may want to create one. (Refer to the section in your DOS manual on creating batch files.)

By placing the QICstream directory path in the PATH command of the AUTOEXEC.BAT file in your root directory, you can start QICstream from any directory. Otherwise, you must be in the QICstream directory to run QICstream.

- > Include your QICstream directory path in the PATH command line in your AUTOEXEC.BAT file.

For example, if your QICstream directory is named QICBACK; your AUTOEXEC.BAT file PATH command might look like this:

**PATH c:\;c:\qicback**

- > You must either run the AUTOEXEC.BAT file or restart your system to make the file contents effective.



When you use AUTOEXEC.BAT, your system no longer prompts you for the date and time at system start up. Since the date and time input are necessary to run QICstream (see next paragraph), you need to add the DATE and TIME commands to the AUTOEXEC.BAT file (unless your system contains a battery installed clock).

- > Include the DATE and TIME commands in your AUTOEXEC.BAT file.

## **Date and Time**

You must set the date and time in your system in order to run QICstream.

If you have a battery installed clock in your system (keeps track of date and time even when the power is Off), then you're all set and need not read the rest of this section.

If your system prompts you for the date and time at system start up, be sure to enter the correct date and time.

If you have an AUTOEXEC.BAT file in your root directory, you will not be prompted for the date and time inputs. You must use the DATE and TIME commands. Either input DATE and TIME from your console, or add these commands to your AUTOEXEC.BAT file, as indicated in the previous section.

## **Adding Buffers**

QICstream performance is affected if your operating system (DOS) does not have enough buffer space allocated in memory.

DOS only allocates 2 buffers at start up (3 in the PC AT) unless you tell it differently.

It is recommended that you set the DOS 'BUFFERS' value to at least 10.

To increase the buffer space, you must use the **BUFFERS** command in a **CONFIG.SYS** file .

- > If you don't already have one, create a **CONFIG.SYS** file in your root directory.
- > Edit the **CONFIG.SYS** file so that the **BUFFERS** value is at least 10.

**BUFFERS=10**

- > Reset the system to make the new buffers value effective.

**QICstream is now ready for operation.**



## CHAPTER 3

# HOW TO USE THE OPERATING INSTRUCTIONS

## MANUAL CONVENTIONS

Read this chapter before you read the QICstream operating instructions. The following paragraphs define the particular terms and text formats used in the following chapters.

### Operating Instructions

Operating instructions are indented from the main text.

They indicate user inputs and QICstream responses. (Bulleted paragraphs are not operating instructions.)

An indented paragraph preceded by an arrow > indicates that a user action is required. For example:

- > Type the identifying name of your choice (up to 44 characters).

### User Inputs

User inputs are control key inputs, typed inputs, and menu selections.

Specific user inputs are indicated in the text in **boldface** print and are a different type style from the regular text.



## Screen Displays

All screen displays (menus, messages, tables, prompts) are separated from the manual text by a double-underline:

## Control Key Inputs

Control key inputs are indicated in angle brackets <>. Key combinations are also indicated in angle brackets <>, and the keys are separated by a dash.

For example:

F10 key.....<F10>

Control key with Break key....<Ctrl-Break>

Control key inputs are in **boldface** text.

## CONDITIONAL Paragraphs

*CONDITIONAL* paragraphs appear in *italicized* print throughout the operating instructions. They indicate QICstream features which occur only when certain conditions exist.

For example, a menu for selecting the correct backup tape drive displays only if your system is configured with more than one Archive tape drive. Rather than repeatedly printing this menu in the operating instructions, a *CONDITIONAL* paragraph appears in the text wherever this menu may appear.



## Hints

**HINT** paragraphs appear in *italicized* print throughout the manual. These paragraphs offer installation, setup, and operating tips.

For example:

**HINT:** *The more buffers that are queued with data the better. This indicates that the computer is providing plenty of data to keep the tape drive streaming, thus reducing total backup time.*



## CHAPTER 4

# QICstream FEATURES AND FUNCTIONS

### THE START OPTIONS

You normally start QICstream by entering the command:

**QSV.EXE**

You can add any of five start options to alter normal program operations. You add these options the same way you add a DOS command option, adding the slash / character and the option name immediately after QS (QS/option). The start options are:

**/AT /MONO /NOARC /NOCON /NOSORT**

These options are described in the following paragraphs.

#### **QSV/AT**

If your system is an IBM PS/2, model 80, you must use this start option.

#### **QSV/MONO**

This option specifies that only monochrome screen attributes be used (normally, color attributes are used). The **/MONO** option is useful if your system has a composite monochrome monitor attached to a color card. This hardware configuration can make parts of your screen invisible or unreadable.

## QSV/NOARC

Normally, the archive bit is cleared for each file that is backed up. The /NOARC option prevents the clearing of the archive bit after a file is backed up.

When /NOARC is in use, the following message appears on the backup screen:

```
_____  
_____/NOARC option - no ARCHIVE update_____  
_____
```

Normally, the archive bit is set for each file that is restored. The /NOARC option prevents the setting of the archive bit after a file is restored.

When /NOARC is in use, the following message appears on the restore screen:

```
_____  
_____/NOARC option - archive bits will be cleared_____  
_____
```

## **QSV/NOCON**

The No Concurrency option, /NOCON, prevents the disk and tape from accessing memory at the same time. /NOCON is necessary on systems whose Direct Memory Access (DMA) controller cannot handle simultaneous data transfers.

A concurrency problem causes any data transfer operation (i.e., format or backup) to produce an error. Should you experience this problem, try restarting QICstream using the /NOCON option.



## QSV/NOSORT

The No:Sort option, /NOSORT, prevents directory sorting.

Normally, directories are sorted by the backup function before they are written to the tape. This sorting process may be incompatible with your copy-protection system, or you just may not want your directories sorted. The /NOSORT option prevents this sorting. The directories are backed up (and therefore, restored) in the same order they were found on the disk.

## Starting QICstream from a Batch File

If you need to use a start option(s) everytime you load QICstream, you may want to create a DOS batch file (refer to your DOS manual). This way you can load QICstream from any directory by simply typing the batch file name.

The following procedure shows how to create a batch file to load QICstream. You can give any legal DOS name to your batch file. The name **test** is used as an example.

- > Your current directory should be the directory containing QICstream. At the DOS prompt type:

**copy con test.bat <Enter>**

- > Then type your QICstream command and start option(s), for example:

**QSV/NOCON <Enter>**



- > Then end the batch file by typing:

**<Ctrl-Z> <Enter>**

You run the new batch file by typing the name of the file. In the above example, you would type **test**. This starts QICstream with the options you indicated in the batch file.

You can run the QICstream batch file from any directory if your QICstream directory is in your AUTOEXEC.BAT file (refer to Chapter 2, "Using AUTOEXEC.BAT").

## THE CONTROL LINE

A Control Line appears at the bottom of most of the QICstream screens. It lists the active control keys.

The active control keys and the control key functions vary from screen to screen. Until you become accustomed to the QICstream operations, check the Control Line of each new screen before making any key strokes.

The Control Line at the bottom of the Main Menu looks like this:

---

↓↑:move pointer    Enter:select item    F1:help    Esc:previous screen

---

## **QICstream CONTROL KEYS**

A control key is only active when it is listed in the Control Line at the bottom of the screen.

The following are the QICstream control keys.

### **|| Up and Down Arrow Keys**

In a menu, the up and down arrow keys move the highlight bar to the function you wish to select.

In a file table, the up and down arrow keys scroll the list of files and subdirectories through a set of pointers.

### **>< Right and Left Arrow Keys**

The right and left arrow keys allow you to change directories while in a file table. To list the files within a subdirectory, place the subdirectory between the pointers at the center of the screen, and press the right arrow key **>**. To exit the subdirectory, press the left arrow key **<**.

### **+ Plus Key**

The plus **+** key is used to tag files or subdirectories in a file table. Tagging adds the file or subdirectory to the list of those to be backed up or restored. The Insert key also performs this function.

## - Minus Key

The minus - key is used to remove a tag from a file or subdirectory in a file table. Removing a tag deletes the tagged file or subdirectory from the list of those to be backed up or restored. The Delete key also performs this function.

## Ctrl-Break

<Ctrl-Break> is only available when the message:

---

**Press CTL (BRK) to interrupt current activity**

---

is displayed at the bottom of the screen.

The Ctrl-Break key combination interrupts program activity, and causes a prompt to be displayed at the bottom of the screen.

*HINT: Don't be alarmed if the program activity does not pause immediately after you press <CTRL-BREAK>. The drive must complete the present activity before the pause can take effect.*

The prompt gives you the option of continuing with the operation or aborting the operation.



For example: if you press **<Ctrl-Break>** while a restore is in process, the restore pauses, and the following prompt is displayed:

---

Do you wish to abort this restore?      **No**    **Yes**

---

- > Select **No** and the restore resumes.
- > Select **Yes** and the restore is aborted with the following prompt:

---

**\*\*\* This restore was NOT successfully completed \*\*\***

---

## Delete Key

(Performs same function as the minus - key.)



## Enter Key

The Enter key takes you to the next step in an operation. It has several specific functions:

- | In a menu, the Enter key is used to select the highlighted item.
- | When selecting files in a file table, the Enter key is used to end the selection mode and continue the QICstream operation.
- | In a file set table, the Enter key is used to select a file set.
- | At the conclusion of an operation, the Enter key takes you back to the originating menu.

## Esc Key

The Esc Key backs you out of the program. In most cases, Esc takes you to the previous screen. At the Main Menu, Esc exits you from QICstream, taking you back to the DOS prompt.

## F1 Key

The F1 key gives you context-sensitive help messages during all QICstream operations. Should you encounter an error message, F1 also gives you a further explanation of the error condition.

## Insert Key

(Performs same function as the plus + key.)

## MAKING SELECTIONS

### Menus and Prompts - Selecting Items and Responses

There are two ways to make selections from menus and prompts.

- | Use the arrow keys to move the highlight bar to the item or response you wish to select, and then press the Enter key.

Erase a tape      +      Enter key

- | Type the first character (letter or number) of the item or response you wish to select. The first character appears in **bolded** video. (On a color monitor, the first character appears in a different color from the rest of the item.)

Erase a tape      (Type the letter "E")

## File Set Tables - Selecting File Sets

Whenever you perform a restore, verify, or directory of tape operation, you have the option of performing the operation on the entire tape or a single file set.

If you choose to select a file set, a file set table is displayed. This table lists all of the file sets on the tape, and lets you select one file set for the restore operation.

The following is a sample file set table:

Tag files to backup						
Name	Ext	Size	Att	Date	Time	Tagging Commands
IBM810	COM	9,728	.RHS	3-27-86	12:00p	Ins: Add file or (DIR) + to selected set  Del: Remove file or (DIR) - from selected set
IBMDOS	COM	27,760	.RHS	3-27-86	12:00p	
123		(DIR)		1-01-80	7:26p	
DATATEST		(DIR)		11-08-86	2:15a	
DOS		(DIR)		7-18-86	6:58p	
JAGUAR		(DIR)		1-01-80	12:01a	
A		18,944	....	1-01-80	12:55a	

Path= C:\

To select a file set, use the Up and Down arrow keys to position the file set between the pointers and then press the Enter key.

## **File Tables - Selecting Files and Subdirectories**

QICstream lets you select individual files. Whenever you choose to select files for a QICstream backup or restore, a file table is displayed.

The backup file table lets you view all files and subdirectories on the source drive.

The restore file table lets you view all files and subdirectories contained in a file set on the tape.



The following is a sample file table:

---

Select file set to restore

Identification

Size      Date      Time

TODAYS BACKUP	6,220,574	1-30-87	2:58p
CHANGED FILES	0	1-30-87	3:15p
CHANGED FILES	4,288	1-30-87	3:28p

---



Once the file table is displayed, you can select files and subdirectories by tagging those you wish to back up.

To tag a file or subdirectory, simply position it between the pointers and press the **<Ins>** or plus **<+>** key. The tagged item is indicated in reverse video. To remove a tag from an item, position it between the pointers and press the **<Del>** or minus **<->** key.

You can use the Right Arrow key to view files within a subdirectory. You may tag any number of files while in the subdirectory, and then exit the subdirectory by pressing the Left Arrow key.

Once you've tagged all of the files you wish to back up, press **<Enter>** to begin the backup.



## PASSWORD PROTECTION

The password protection routine is also considered a conditional feature of QICstream, since you can bypass it if you don't wish to use it. A *CONDITIONAL* paragraph is inserted in the operating instructions wherever this routine may appear.

### Securing Your Backups

QICstream lets you password protect your backups. Here's how:

Proceed with any backup routine. Once you reach the password prompt:

---

Enter a password (return only for none)

.....

---

you can either:

> Enter your password.

OR

> Press <Enter> only, to avoid password-protecting your backup

*HINT: Choose a personal password that is easy for you to remember. Write it down and put it in a safe place for reference. Use this same password whenever you protect your backups. If you forget your password, your protected backups cannot be restored.*

Your password entry is concealed on the screen:

---

Enter a password (return only for none)

////-.....

---

You are then prompted to re-enter your password for verification:

---

Re-enter the password for verification

.....

---

> Re-enter your password.

The password routine is completed and backup resumes.

## Accessing Protected Tape File Sets

The password-protected file set is easy to recognize. It is displayed in reverse video in each operation's file set table.

To access the file set for a QICstream operation (restore, verify, directory display) you must first enter the password when prompted:

---

File set is password protected. Enter password: .....

---

Access to the file set is denied unless the correct password is entered.



## THE MAIN MENU

QICstream is a menu driven program. All program functions originate from the Main Menu. This menu is displayed when you start QICstream and whenever you complete a Main Menu function.

Main menu

Backup to tape

Restore from tape

Directory of a tape

Tape utilities

Create a macro

Schedule a macro

The Main Menu functions are:

### **Backup to tape**

- backs up all, selected, or changed files from any valid DOS drive (hard disk, floppy diskette, RAM disk).

### **Restore from tape**

- restores file sets or selected files from the tape to the destination drive.

### **Directory of a tape**

- displays the tape's existing file sets and the file directories in each set.

### **Tape utilities**

displays the Tape Utilities Menu where you can Initialize a tape, Verify, Erase, or Retension the tape.

### **Create a macro**

- lets you create a command file (macro) containing frequently used keystrokes. Anytime you want to use that sequence of keystrokes, simply run the command file. The macro automatically performs the sequence of events

### **Schedule a macro**

- lets you automatically perform functions, such as backup, restore, and format a tape, at times you determine.

## THE TAPE UTILITIES MENU

The Tape Utilities menu lets you access four tape-support functions.

Tape utilities menu

Initialize a tape

Verify tape data

Erase a tape

Retention a tape



## **Verify a Tape**

This function lets you check the integrity of data on the tape cartridges in your library. Tape data is read and checked using QICstream's powerful error correction methods, to insure that the data is still good. An entire file set or individual files can be verified.

Tape data errors can occur due to tape degradation or tape mishandling. The verify operation detects any tape errors and lets you know where the error occurred.

## **Erase a Tape**

Before this function is performed, the user is prompted to verify the erase. The **Erase a tape** function is similar to erasing a diskette. Tape formatting is left intact, but user data is no longer accessible.



## **Retension a Tape**

Uneven tension on the tape can cause data errors. To prevent this, always retension a new tape cartridge, and retension any tape cartridge that produces excessive errors.

This function performs a retension pass on the tape. It rewinds the tape to the beginning, then to the end, and back to the beginning. (This function does not erase the tape.)

## OPENING AND CLOSING THE TAPE DRIVE

You will see tape drive Opening and Closing messages flash as you use QICstream. As these messages flash, the screen pauses while important program and tape drive functions are performed automatically. The time frame involved to open and close the tape drive varies with each QICstream operation.

Near the beginning of any QICstream operation, one of the first messages you will see is:

---

**Please Wait. The tape drive is being opened.**

---

As this message flashes:

- the tape rewinds (unless the tape is already at the beginning);

Near the end of any QICstream operation you will see the following message:

---

**Please Wait. The tape drive is being closed.**

---

As this message flashes:

- The tape rewinds.

## BACKUP FILE VERIFICATION

Along with QICstream's powerful error correction routines, the program provides for backup file verification.

QICstream also has a menu-selectable verify function. This verify function is selected from the Tape Utilities menu. It lets you check the integrity of the data on the cartridges in your library.

**NOTE:** It is highly recommended that the verify function is used after every backup performed.

## CHAPTER 5

# OPERATING INSTRUCTIONS

### GETTING STARTED

To start QICstream:

- > Type **QSV <Enter>**. (You may need to enter any of the start options defined in Chapter 4, or enter a macro filename as defined in "Create A Macro")

In a few seconds the Main Menu appears.

---

---

Main menu

Backup to tape

Restore from tape

Directory of a tape

Tape utilities

Create a macro

Schedule a macro

---

---



QICstream is now operational. If your tape cartridge is loaded, you're ready to perform any QICstream function.

## BACKUP TO TAPE

**NOTE:** It is highly recommended that the verify function is used after every backup performed.

- > Select **Backup to tape** from the Main Menu.

The Select Drive To Backup menu is displayed.

---

---

Select drive to backup

A

C

D

E

---

---

This menu displays the DOS assigned drive letters, allowing you to select a source drive.

**CONDITIONAL:** *The drive letters displayed on your screen may vary depending on your system configuration.*

To select a drive to backup:

- > Select the drive letter from the Select Drive To Backup menu.

The menu screen clears and the displayed message is:

---

---

Please wait, loading directories from the backup drive

C:\DOS

---

---

The name of each directory on the backup drive is displayed as it is loaded.

When directory loading is complete, the message display indicates that loading is finished, and the Select Type Of Backup menu is displayed.

---

**Select type of backup**

**ALL files on drive**

**SELECTED files**

**CHANGED files**

---

This menu gives you three backup options:

### **ALL files**

- lets you back up all files on the disk, including hidden files.

### **SELECTED files**

- lets you select and back up individual subdirectories and/or files.

### **CHANGED files**

- lets you back up only those files which have been created or changed since the last backup.

Operating instructions for each backup option are described on the following pages.

If you press ENTER without specifying the backup option, the following reminder appears at the bottom of the screen:

---

---

You are backing up 0 files. Is this okay? No Yes

---

---

Answer no to tag the files you want to back up. Answering yes takes you through the series of backup screens. Information regarding the backup attempt is logged, but no files are actually backed up.



## Backup - ALL files

Once you select the **Backup to tape** function from the Main Menu, you're ready to back up all of your disk files.

- > Select **ALL files on drive** from the Select Type Of Backup menu.

The menu screen clears and the displayed message is:

---

Enter an identification string for the backup

.....

---

This prompt will attach an identifying name to your file set which, in this case, contains all of the files on the disk. For example, if you're backing up your entire hard disk you might want to enter the disk Volume label.

- > Type the identifying name of your choice (up to 44 characters).
- > Press **<Enter>**.

The displayed message is:

---

Enter a password (return only for none)

.....

---

- |  |    |   |
|--|----|---|
| > Type the password of your choice (up to 8 characters), then press <Enter>. | OR | > Just press <Enter> to avoid password-protecting your backup |
|--|----|---|

**CONDITIONAL:** *If you password-protect your backup, QICstream invokes a short password routine. (For more information on passwords, see "Features and Functions".)*

**CONDITIONAL:** *The optional **Select tape..** menu may appear after the password display(s). Refer to "Features and Functions" for more on the Select Tape menu.*

Once the password is verified or bypassed, the tape drive is opened.

At this time, the software evaluates both the size of your backup and the available recording space on the tape.

**CONDITIONAL:** *If your tape cartridge does not contain available space for either the file set directory or the entire file set, a special menu is displayed. Refer to the section in this chapter called "When the Backup Won't Fit".*

Let's assume tape drive backup conditions are OK.

Data backup begins, and each filename is displayed as it is read from the disk.

Your screen displays the backup information in the following format:

---

\*\*\* Backing up to tape \*\*\*

Time Left= 0....5...10...15...20...25...30...35...40...45...50...55...60

\123

PARTA.WK1	PARTB.WK1	PARTC1.WK1	PARTC2.WK1	PGRAPH.CNF
PGRAPH.EXE	PGRAPH.HLP	REALTY.WK1	ROMAN1.FNT	ROMAN2.FNT
S123OFF.COM	S123ON.COM	SCRIPT1.FNT	SCRIPT2.FNT	TRANS.COM
UTIL.SET	VCMRK.XLT	VIEW.EXE	VIEWO.DEM	VIEWA.DEM
VIEWB.DEM	VIEWC.DEM	WR1WKS.XLT	WR1WRK.XLT	WRKWR1.XLT

\DATATEST

1ME6166E.TST	1ME66DB6.TST	1MEGAAAA.TST
--------------	--------------	--------------

---

The backup screen consists of a time line, filename display, and message display.

### **Time Line**

The time line display (top of the screen) counts down, in minutes, the approximate time left to complete the backup.

### **Filename Display**

Subdirectories and their respective filenames are listed in the filename display area (center of the screen) as they are backed up.

### **Message Display**

As data is backed up, the display indicates the number and status of buffers available for data transfer. (The buffer total is dependent on your system configuration and the amount of free memory in the system.)

As data is verified, this line indicates the number of tape segments left to verify.

When backup is complete, this line indicates if the backup was successful or not.



**HINT:** *The more buffers that are queued with data the better. This indicates that the computer is providing plenty of data to keep the tape drive streaming, thus reducing total backup time. If the number of buffers queued runs continually low or to 0 (streaming stops), you need to increase the number of available data buffers. You can do this by adding more memory to your system (if you have less than the full 640K) or by removing resident programs.*



Once all of the data is backed up the tape drive is closed.

The final message is:

---

**Backup completed successfully**

---

The following three statistics regarding the completed backup are displayed with the final message:

- Tape Underruns: varies according to the application.
- Verify Errors: shows number of re-writes per tape.
- Total Time: time to complete the backup.

> Press <Enter> or <Esc> to return to the Main Menu.

Do not be alarmed by this last screen. **This is not an error message.** The Verify Error and Underrun counts give a status

report on your backup or restore operation. These terms are defined as follows.

## Verify Errors

A **verify error** is not really an error but is a reliability feature. It is a repeated attempt by the tape drive to read or write data on the tape.

As the tape drive backs up or restores data, it also checks that data to make sure it is written to or read from the tape correctly. If a problem is encountered, the tape drive attempts a number of retries to read or write the problem data. Usually the problem is corrected by these retries. All of the retries during a backup or restore are tallied and displayed as the verify error count at the end of your operation.

A low verify-error count is normal, but an extremely high verify-error count usually means tape quality is deteriorating. Check your tape drive manual for the verify error rates for your drive.

## Underruns

An **underrun** is a data transfer term. The underrun tally is the number of times that the tape drive streaming action stops during a backup or a restore operation.

Again, this is not an error condition. It is usually an indication that the computer system does not supply data to the tape drive (backup) or receive data from the

tape drive (restore) fast enough to keep the tape in motion.

## Backup - SELECTED Files

Once you select the **Backup to tape** function from the Main Menu, you're ready to back up selected files.

- > Choose **SELECTED files** from the Select Type Of Backup menu.

The menu screen clears and a file table of the loaded disk drive is displayed.

Tag files to backup						
Name	Ext	Size	Att	Date	Time	Tagging Commands
						Ins: Add file or (DIR) + to selected set
						Del: Remove file or (DIR) - from selected set
IBM810	COM	9,728	.RHS	3-27-86	12:00p	
IBM805	COM	27,760	.RHS	3-27-86	12:00p	
123		(DIR)		1-01-80	7:26p	
DATATEST		(DIR)		11-08-86	2:15a	
DOS		(DIR)		7-18-86	6:58p	
JAGUAR		(DIR)		1-01-80	12:01a	
A		18,944	....	1-01-80	12:55a	

Path= C:\

To select files for backup:

- > Use the Up and Down arrow keys to scroll the list of files and subdirectories through the pointers.
- > Press <Ins> or <+> to tag a file or subdirectory once you've placed it between the pointers. Tagging adds the file or subdirectory to the file set for backup.

**NOTE:** When you tag a subdirectory, you are tagging all files and subdirectories within that subdirectory.

- > To remove a tag, place the tagged file or subdirectory between the pointers and press <Del> or minus <->.
- > To list the files within a subdirectory, place the subdirectory between the pointers and press the Right Arrow key >. You may then tag any of the files within the subdirectory.
- > To exit the subdirectory, press the Left Arrow key <. Any tags made while in the subdirectory remain intact.



Tag as many files and/or subdirectories as you wish. The collection of tagged files makes up your file set. When you're ready to backup the file set:

> Press <Enter>.

The menu screen clears and the displayed message is:

---

---

Enter an identification string for the backup

.....

---

---

From this point, the backup procedure is the same as in "Backup - ALL files".



## Backup - CHANGED Files

You may not want to back up your entire disk every day.

By selecting **Backup CHANGED files**, you back up only those files which have been added or changed since the last backup.

Once you select the **Backup to tape** function from the Main Menu, you are ready to back up your changed files.

- > Select **CHANGED files** from the Select Type Of Backup menu.

The menu screen clears and the displayed message is:

---

---

Enter an identification string for the backup

.....

---

---

From this point, the backup procedure is the same as in "Backup - ALL Files".

If you press ENTER without specifying the backup option, the following reminder appears at the bottom of the screen:

---

---

Your are backing up 0 files. Is this okay? No Yes

---

---

Answer no to tag the files you want to back up. Answering yes takes you through the series of backup screens. Information regarding the backup attempt is logged, but no files are actually backed up.

From this point, the backup procedure is the same as in "Backup - ALL Files".

## **When the Backup Won't Fit**

When you perform a backup, QICstream first evaluates whether there is sufficient tape space to contain the backup.

Two special conditions which can occur when you attempt to backup data are:

- The file set directory doesn't fit.
- The entire file set doesn't fit.

When a second cartridge is required you will be prompted on the screen.

## RESTORE FROM TAPE

To restore your backed up file sets:

- > Select **Restore from tape** from the Main Menu.

**CONDITIONAL:** *The optional **Select tape..** menu may appear after the password display(s). Refer to "Features and Functions" for more on the Select Tape menu.*

The tape drive is opened.

The menu screen clears, and the tape cartridge file set table is displayed.

---

Select file set to restore

Identification

Size      Date      Time

▶ TODAYS BACKUP

6,220,574    1-30-87    2:58p

CHANGED FILES

0    1-30-87    3:15p

CHANGED FILES

4,288    1-30-87    3:28p

---

This table lists all of the file sets stored on the tape cartridge, their size in bytes, and the backup date and time.

***CONDITIONAL:*** *If you have password-protected any file sets, they appear in the table in reverse video. When selecting these file sets, you will be prompted for the password.*

To select a file set to restore:

- > Use the Up and Down arrow keys to position the file set between the pointers.
  
- > Press <Enter>.



The screen clears and the Select Type Of Restore menu is displayed.

---

Select type of restore

ALL files

SELECTED files

---

This menu gives you the option of restoring all files in the selected file set, or tagging and restoring individual files within the selected file set.

## Restore - ALL Files

- > Select **ALL files** from the Select Type Of Restore menu.

The Select Drive To Restore menu appears.

select drive to restore

A

C

D

E

This menu displays the DOS assigned drive letters, allowing you to select a destination drive.

***CONDITIONAL:*** *The drive letters displayed on your screen may vary depending on your system configuration.*

To select the destination drive:

- > Select the desired destination drive letter.

The screen clears and a sequence of messages and prompts are displayed before the restore operation begins. The initial display is:

---

About to restore file(s) originally from drive C, volume: (no label)  
onto drive C, volume: (no label)

Do you want to be prompted before existing file(s) are overwritten?

No

Yes

---

If a file on your tape has the same name as a file on your destination disk, the disk file will be overwritten unless you indicate otherwise.

Therefore, restore has two modes of operation, with and without overwrite prompts.

**HINT:** The without overwrite mode is useful when some files have been updated since the backup was performed. Overwriting these files places the old data in the files.

- > Select **Yes** and you will be prompted each time a file overwrite situation is detected at the destination drive.
- > Select **No** and files on the destination drive will be overwritten without prompting.

After either selection, another prompt is displayed:

---

I will now begin the restore - are you certain you wish to continue?

Cancel

Go ahead

---

- > Select **Cancel** and QICstream returns to the Main Menu.
- > Select **Go ahead** and the restore operation begins.

The screen clears and the restore information is displayed in the following format:

---

\*\*\* Restoring from tape \*\*\*

Time Left= 0...5...10...15...20...25...30...35...40...45...50...55...60

\JAGUAR\MSWORD

JAG-UM1.DOC

JAG-UM3.BAK

JAG-UM3.DOC

JAG-UM4.BAK

JAG-UM4.DOC

JAG-UM5.BAK



The restore screen consists of a time line, filename display, and message display.

### **Time Line**

The time line display (top of the screen) counts down, in minutes, the approximate time left to complete the restore.

### **Filename Display**

Subdirectories and their respective filenames are listed in the filename display area (center of the screen) as they are restored.

### **Message Display**

As data is restored, the display indicates the number and status of buffers available for data transfer. (The buffer total is dependent on your system configuration and the amount of free memory in the system.)

When restore is complete, this line indicates if the restore was successful or not.

If you chose file restore without overwrite prompts, the restore operation runs uninterrupted. The filenames are displayed as they are restored.

If you selected prompting for file overwrites, the filename display pauses whenever a file overwrite condition is detected, and the following prompt displays at the bottom of the screen:

---

File exists, want to replace it?	No	Yes
----------------------------------	----	-----

---

When the restore operation is completed, the tape drive is closed.

The final message is:

---

Restore completed successfully
--------------------------------

---

and a **Total time:** figure for the restore operation is displayed.

> Press <Enter> or <Esc> to return to the Main Menu.

## Restore - SELECTED Files

- > Select **SELECTED** files from the Select Type Of Restore menu.

The menu screen clears, and the restore file table, listing the subdirectories and files of the selected file set, is displayed.

### Tag files to restore

Name	Ext	Size	Att	Date	Time	Tagging Commands
MSWORD		(DIR)		11-03-86	1:53p	Ins: Add file or (DIR) + to selected set
1ME66DB6	TST	0	....	1-01-80	12:03a	
5_6BD6	TST	0	....	11-08-86	5:04p	Del: Remove file or (DIR) - from selected set
A		66,633	....	11-08-86	7:49p	
ARCHIVL3	EXE	66,633	....	11-08-86	7:49p	
ARCHIVL7	EXE	66,346	....	11-19-86	2:03p	
ARCHIVL8	EXE	52,920	....	12-05-86	2:59p	
ARCHIVL9	EXE	71,591	....	12-08-86	1:50p	
B		657	....	1-01-80	12:01a	
DEMO2000	BAT	512	....	8-22-86	1:53p	
DEMO360	BAT	512	....	8-22-86	12:17p	
DMAKE	BAT	384	....	10-07-86	1:33p	
DOREEN	COM	535	....	4-01-84	7:29p	

Path= C:\JAGUAR

To select files to restore :

- > Use the Up and Down arrow keys to scroll the list of files and subdirectories through the pointers.
- > Press <Ins> or <+> to tag a file or subdirectory once you've placed it between the pointers. Tagging adds the file or subdirectory to the restore list.

**NOTE:** When you tag a subdirectory, you are tagging all files and subdirectories within that subdirectory.

- > To remove a tag, place the tagged file or subdirectory between the pointers and press <Del> or minus <->.
- > To list the files within a subdirectory, place the subdirectory between the pointers and press the Right Arrow key >. You may then tag any of the files within the subdirectory.
- > To exit the subdirectory, press the Left Arrow key < . Any tags made while in the subdirectory remain intact.



Tag as many files and/or subdirectories as you wish. When you're ready to restore the tagged files:

> Press <Enter>.

From this point, the restore procedure is the same as in "Restore - ALL files".

## Multiple Tape Restore

If you are restoring from a file set which is contained on more than one tape, you must begin by inserting the first tape of the series.

In a multiple tape backup, the file set directory is stored on the first tape of the series. The drive cannot locate files on the continuation tape(s) without the file set directory.

Should you initially insert a tape other than the first tape in the series (called a "continuation tape") and attempt a restore, the following error message displays:

---

ERROR

You can't select that entry

---



## DIRECTORY OF A TAPE

- > Select **Directory of a tape** from the Main Menu.

**CONDITIONAL:** The optional **Select tape..** menu may appear at this point. If it does, refer to "Features and Functions" for more information on the Select Tape menu.

The menu screen clears, and the tape cartridge file set table is displayed.

Select file set for directory display

Identification

Size Date Time

test1	6,130,290	1-13-87	4:52p
test2	157,378	4-01-84	1:05p
Jan21archive	20,145	4-01-84	5:51p

The directory file set table lists all of the file sets stored on the tape cartridge.

***CONDITIONAL:*** *If you have password-protected any file sets, they appear in the table in reverse video. When selecting these file sets, you will be prompted for the password.*

The Directory Of A Tape function is also useful for checking the available space left on the tape.

To select a file set for viewing:

- > Use the Up and Down arrow keys to position the file set between the pointers.
- > Press <Enter>.

The screen clears and the file set directory is displayed.

## File set directory display

Name	Ext	Size	Att	Date	Time
JAGUAR		(DIR)		1-01-80	12:01a
ARTICLE3	5	19,968	....	11-11-86	12:28a
DISKDEMO	EXE	47,467	....	10-16-86	10:12a

Path= C:\DEMO

To list the files within a subdirectory:

- > Use the Up and Down arrow keys to scroll the list of files and subdirectories through the pointers.
- > Place the subdirectory between the pointers and press the Right Arrow key >.

To exit the subdirectory:

- > Press the Left Arrow key < .

View as many files and/or subdirectories as you wish. When you're done:

- > Press <Enter> or <Esc> to return to the Main Menu.

## TAPE UTILITIES

The Tape Utilities menu lets you access five tape-support functions.

- > Select **Tape utilities** from the Main Menu.

The Tape Utilities menu is displayed.

Tape utilities menu

Initialize a tape

Verify tape data

Erase a tape

Retention a tape



## VERIFY TAPE DATA

Once you select **Tape Utilities** from the Main Menu, you're ready to verify the tape data.

- > Select **Verify tape data** from the Tape Utilities menu.

***CONDITIONAL:** The optional **Select tape..** menu may appear at this point. If it does, refer to "Features and Functions" for more information on the Select Tape menu.*

The tape drive is opened.

The screen then clears and a new menu appears which gives you the option of verifying all files on the tape or selected files.

---

**Select type of verify**

**ALL file sets**

**SELECTED file set**

---

## Verify - ALL file sets

- > Select **ALL file sets** from the Select Type Of Verify menu.

The verify screen displays, and a "Wait.." message flashes at the bottom of the screen as the tape is positioned for the verify operation.

---

\*\*\* Verifying tape data \*\*\*

Time Left= 0...5...10...15...20...25...30...35...40...45...50...55...60

Verifying file set: test1

Total errors: Correctable= 0 uncorrectable= 0

Please Wait. Positioning tape.

---

Tape verification begins when the Ctrl-Break prompt appears, and the segment count is displayed in the center of the screen.

---

\*\*\* Verifying tape data \*\*\*

Time Left= 0....5...10...15...20...25...30...35...40...45...50...55...60

Verifying file set: test1

Segments left to verify (this file set): 204

Total errors: Correctable= 0 uncorrectable= 0

Press CTL(BRK) to interrupt current activity

---

The verify screen consists of a time line and a verify display.

## **Time Line**

The time line display (top of the screen) counts down, in minutes, the approximate time left to complete the verify.

## **Verify Display**

The verify display lists the file set names as they are verified, counts down the segments left to verify, and displays an error message if an error is encountered.

If an error is detected while verifying, the verify operation aborts and returns to the previous screen.

When verify is completed, the total time for the verify operation is displayed; the tape drive is closed; and a "Verify completed" message, with error status, is displayed.

---

Verify completed, no tape errors found
--

---



## ERASE A TAPE

Once you select **Tape Utilities** from the Main Menu, you're ready to erase the tape.

Remember, erasing the tape destroys all data on the tape.

- > Select **Erase a tape** from the Tape Utilities menu.

***CONDITIONAL:** The optional **Select tape..** menu may appear at this point. Refer to "Features and Functions" for more information on the Select Tape menu.*

The following prompt displays at the bottom of your screen:

---

Please verify ERASE by selecting YES:    No    Yes

---

This verification prompt is a safety feature that prevents accidental tape erasure.

- > Select **No** at the verify prompt to exit the erase function and return to the Tape Utilities menu.
- > Select **Yes** at the verify prompt to begin the erase function.



Once the tape is erased, the following message is displayed at the bottom of the screen:

**Tape erased successfully**

- > Press **<Enter>** or **<Esc>** to return to the Tape Utilities menu.

## RETENSION A TAPE

Once you select **Tape utilities** from the Main Menu, you're ready to retension the tape.

- > Select **Retension a tape** from the Tape Utilities menu.

***CONDITIONAL:** The optional **Select tape..** menu may appear at this point. Refer to "Features and Functions" for more information on the Select Tape menu.*

The following prompt appears at the bottom of the screen, and tape retensioning begins.

---

Please Wait. The specified tape is being retensioned.

---

When tape retensioning is completed, the following message and option line appear.

---

Tape retensioned successfully

---

> Press **Esc** or **Enter** to return to the menu selections.

## CREATE A MACRO

- > Select **Create a macro** from the Main Menu.

The menu screen clears and the following prompt is displayed:

---

Enter a name for the macro file to be created

.....

---

When you create a macro, you are actually creating a DOS command file containing the frequently used keystrokes that you select. Therefore, the macro name must be a valid filename, 1 to 8 letters or digits long. See your DOS manual for legal filename structures. Do not add an extension. The .COM extension is used automatically.

You may also enter the macro name in a DOS path (d:xxx\yyy\macro). If you do not specify a path, the macro is stored in the current DOS directory.

- > Enter the macro filename of your choice, using DOS path or filename syntax.

The following instructions display below the macro prompt:

Enter a name for the macro file to be created

mymacro.....

After you return to the MAIN MENU by pressing Enter, all of your keystrokes will begin to be stored into the macro file.

The macro will continue building until you exit the program by pressing ESC at the MAIN MENU.

The macro may then be run by typing its name while at the DOS prompt line.

Macro file creation begun successfully

---



> Press <Enter> and you return to the Main Menu.

You are now in macro mode. The following message appears at the top of the screen:

---

---

<<< "Create a Macro" operation in progress >>>

---

---

Any QICstream keystrokes you make from this point until you exit QICstream, are saved in the macro file.

**NOTE:** Files are tagged, or selected, by the keystroke position, not by the active filename. Keep this in mind when file selection is part of the macro.

The process of building a macro is aborted when any abnormal circumstance or command causes an error. Examples include specifying a bad disk drive, backing up to tape when no tape is present, or entering a keystroke combination that cannot be interpreted by the system. When such an error occurs, the following message is displayed on the screen:

---

---

<<< Macro processing aborted >>>

---

---

## RUNNING A MACRO

After saving the macro by exiting QICstream, you may use the macro-saved key sequence by entering the macro name at the DOS prompt instead of entering **QSV**. A macro may be run with an option by typing the macro name followed by the option. The following start options may be used:

**/MONO /NOARC /NOCON /NOSORT /BAT**

(The **/BAT** option is explained below. The others are explained at the beginning of this chapter.)

To start a macro named **TEST** with the **/NOCON** option, you would type the following:

**TEST/NOCON**

The program will start and function automatically. While the macro is running, the following message appears at the top of the screen:

---

---

<<< Keystroke macro playback in progress >>>

---

---

If an error occurs while the macro is running, the following message appears at the top of the screen:

---

---

<<< Macro processing aborted >>>

---

---

When a macro runs, the screen also displays the series of many selections you chose while building the macro.

The screen also shows the displays associated with the QICstream function currently run by the macro. To disable the macro-related screen output, enter the macro-related screen output, enter the macro name followed by **/BAT**.

You can also schedule your macros to run at your convenience by using the **Schedule a macro** function.

## SCHEDULE A MACRO

The macro scheduler lets you automatically perform QICstream functions such as backup, restore, at the times you determine.

The **Schedule a macro** function is in the Main Menu and gives you the following features:

- You can schedule up to 17 macros.
- You can schedule a macro to run on a specific date and time; or, schedule a macro to run weekly.
- A "wakeup" alarm alerts you if you are using the system when a macro is scheduled to run.
- A disk-based automatic scheduler restores a schedule when you reboot your system.

### How to Schedule a Macro

To schedule a macro, you must first create one with the **Create a macro** function (refer to "Create a macro" in Chapter 5 of this manual).

To select a macro (or DOS command):

- > Select **Schedule a macro** from the Main Menu.

The Main Menu clears and the Automatic Macro Scheduler screen displays. This screen gives you the options of adding macros to the schedule, deleting macros from the schedule, and exiting the macro scheduler.



> **Select Add to schedule**

A new screen display prompts you to enter the day (or date) and time you want the macro to run, and the name of the macro (or DOS command). You can continue to add macros (up to 17) or exit the scheduler at any time.

To delete a macro (or DOS command):

> **Select Delete from schedule.**

A highlight bar appears in the macro list. You can move the highlight bar with the up and down arrow key.

- > **Highlight the macro you want to delete and then press Enter.**

To activate the automatic scheduler:

> **Select Save & start schedule.**

The display returns to the main menu.

The scheduler saves the macro in the file called QSV\_SCHD.SCD in the root directory, and it appends the following command to the Autoexec.bat file:

QSV/MOD



Remember, online help is always available by pressing the F1 key.

### **The Wakeup Alarm**

Five minutes before a macro is scheduled to run, QICstream begins monitoring your keyboard activity.

- If keyboard activity **is not** detected during the 5 minutes prior to macro time, then the macro runs as scheduled.
- If keyboard activity **is** detected during the 5 minutes prior to macro time, then the wakeup alarm sounds at the time the macro was scheduled to run.

Once the wakeup alarm sounds, you should exit any program you may be using and return your screen to the DOS prompt; otherwise, your scheduled macro may be cancelled.

- If keyboard activity **is not** detected during another five minute monitoring period, the macro is run (about 5 minutes from alarm sounding).
- If keyboard activity **is** still detected 5 minutes after the alarm sounds, then the macro is cancelled.



## **CHAPTER 6 IN CASE YOU NEED HELP**

### **ONLINE HELP**

QICstream online help is always available by pressing the <F1> key. No matter where you are in the program, you can display an informative message describing your current program activity.

Should you encounter an error message, <F1> also gives you additional explanation of the error condition.

### **HARDWARE TROUBLESHOOTING**

Most problems are hardware related and can be relatively simple to correct by yourself. We hope you never have a problem operating your QICstream program, but if you do, here are some things you should check first.

1. Remove the tape cartridge.
2. Power-off your system.
3. Remove the system cover, following cover removal procedures in your system manual.
4. Check the cables and connectors for proper tape drive installation. Re-seating the connectors may help.



5. Replace the cover.
6. Power-on the system.
7. Check for any system contentions that maybe in conflict with the controller's Jumper selection. You may need to Reselect Address, IRQ or DMA. If so remember to change QSVMOD.EXE file.
8. Re-load QICstream, and re-insert the tape cartridge.
9. Repeat the operation that caused the error.
10. If the same error occurs, try the operation again with a different tape cartridge installed. If this solves the problem, the previous tape cartridge is defective.
11. If Step 9 does not solve the problem, clean the drive according to the following procedure.

## **CLEANING THE TAPE DRIVE HEADS**

To ensure reliable operation, tape drive heads should be cleaned periodically. A regular schedule should be established depending on use. The recommended schedule is:

Clean the head assembly

- after an initial pass with a new tape cartridge
- after eight hours of normal use.

Clean the sensor hole and tape cartridge cavity

- when dirt or dust is visible.

## Cleaning Supplies

You will need the following:

- Low pressure aerosol air
- Archive head cleaning fluid, Archive Part Number 14917-001, or Freon "TF" solution
- Archive head cleaning pads, Archive Part Number 14918-001
- Lint-free cotton swabs or any industry acceptable head-cleaning swab

## Cleaning Procedure

1. Remove the tape cartridge, and turn OFF power to the computer.
2. Carefully blow out dust from the sensor hole and tape cartridge cavity with aerosol air.
3. Moisten a swab in the head-cleaning fluid until it is saturated but not dripping.
4. Carefully clean the head by wiping in the directions the tape travels. **DO NOT WIPE PERPENDICULAR TO THE TAPE MOVEMENT DIRECTION OR USE A CIRCULAR, SCRUBBING MOTION.** See the figure at the end of the Cleaning Procedure.
5. Discard used swab, and repeat Steps 3 and 4 with new swabs until the head is clean.

6. Following the procedure in Step 4, use a new, dry swab to remove any remaining cleaning fluid from the head.
7. Turn ON the computer.

## **APPENDIX A**

### **QICstream NETWORKING WITH NOVELL**

#### **CAPABILITIES**

QICstream allows you to back up and restore files to a network file server using Novell NetWare. After a network card driver has been installed in a work station, QICstream detects the presence of a remote logical device. QICstream maintains network security during backup and restore operations. QICstream can be run in supervisor mode as well as user mode.

#### **NOVELL SUPPORT REQUIREMENTS**

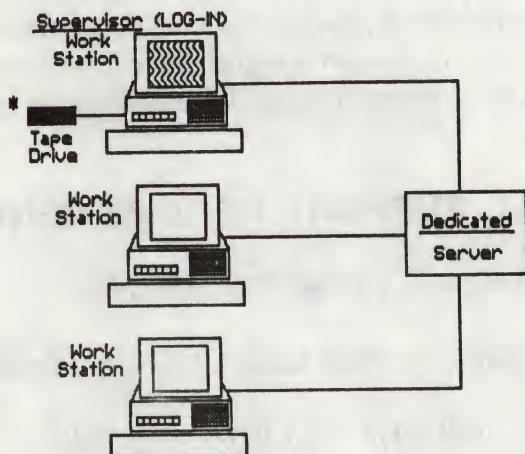
Novell: Advanced NetWare 286 version 2.0A

Interface cards: ArcNET, GNET, 3Com, or compatible

Hardware: IBM XT/AT and 100% compatibles



# TAPE DRIVE INSTALLATION FOR BACKING UP THE DEDICATED SERVER NOVELL



\* = Tape Drive can be either  
Internal or External

**Note:** Tape utility software should be installed on the workstation  
that has the Tape Drive installed and NOT the Server.

A Tape drive can be installed on each workstation so that it's  
Local drive can be Backed Up.

(Fig. 6)

**Tape Drive Configuration with Dedicated Server**

## GETTING STARTED

The following steps allow you to use QICstream on the Novell network:

1. Use the Novell protocol to establish a physical connection to you server.
2. LOGIN to the network as defined by Novell.
3. Invoke the QICstream software as described earlier in this manual.

## SECURITY

During backup, QICstream preserves directory trustee rights and privileges. These security features are then restored when the backed-up files and directories are restored.

To back up or restore, you must have the appropriate security rights to access the desired files and directories. QICstream supports the following trustee rights and privileges:

- | Create new files
- | Delete files
- | Modify file names/flags
- | Open existing files
- | Parental rights
- | Read from files
- | Search for files
- | Write to files

## BACKUP

Backup operations may be performed in either supervisor mode or user mode.

When attempting to back up a file which is opened by another user for write operations, QICstream pauses a short time for the file to be closed. If the file is not closed within this time, the file is not backed up, and a message is displayed. If you wish to skip the opened file without pausing, press the enter key.

If you perform a QICstream operation on a file or directory for which you do not have sufficient rights, the operation stops, and an error message is displayed. Refer to the Error Messages section of this appendix for a description of these messages.

## Supervisor Mode

**NOTE:** In supervisor mode only, you can back up hidden files and files from the \SYSTEM directory.

For best backup results, perform the following steps:

1. Login to the workstation as supervisor.
2. Ensure that other users are off the network.
3. Invoke the QICstream software.
4. Back up individual files and directories as outlined earlier in this manual.



## User Mode

If you are in user mode, you may back up files and directories to which NetWare security gives you access. The following steps outline the procedure for backing up from user mode:

1. Login to the workstation in user mode.
2. Ensure that you have the rights, privileges, and security to access the files and directories you wish to back up.
3. Invoke the QICstream software.
4. Follow the procedures outlined earlier in this book to back up from your local disk or to back up the desired server files and directories.

## RESTORE

Restore operations may be performed in either supervisor mode or user mode.

When attempting to restore a file which is opened by another user for write operations, QICstream pauses a short time for the file to be closed. If the file is not closed within this time, the file is not restored, and a message is displayed. If you wish to skip the opened file without pausing, press the enter key.

If you perform a QICstream operation on a file or directory for which you do not have sufficient rights, the operation stops, and an error message is displayed. Refer to the Error Messages section of this appendix for a description of these messages.



## Supervisor Mode

**NOTE:** In supervisor mode only, you can restore hidden files and files in the \SYSTEM directory.

For best backup results, perform the following steps:

1. Login to the workstation as supervisor.
2. Ensure that other users are off the network.
3. Invoke the QICstream software.
4. Restore individual files and directories as outlined earlier in this manual.

## User Mode

If you are in user mode, you may restore files and directories to which NetWare security gives you access. The following steps outline the procedure for restoring from user mode:

1. Login to the workstation in user mode.
2. Ensure that you have the rights, privileges, and security to access the files and directories you wish to.
3. Invoke the QICstream software.
4. Follow the procedures outlined earlier in this book to restore to your local disk or to restore the desired server files and directories.

## FULL BACKUP AND RESTORE OF DEDICATED SERVER

**NOTE:** You may backup or restore the full server only in supervisor mode.

When attempting to back up or restore a file which is opened by another user for write operations, QICstream pauses a short time for the file to be closed. If the file is not closed within this time, the file is not backed up or restored, and a message is displayed. If you wish to skip the opened file without pausing, press the enter key.

### Full Backup

The following Steps ensure bests results when performing a full backup.

1. Login to the network in supervisor mode.
2. Perform the backup when there are no other users on the network.
3. Ensure that all files are closed.
4. Envoke the QICstream software.
5. Perform a **FULL BACKUP** as described earlier in this manual.
6. Enter the File Utilities, and perform the Verify operation on the files and directories just backed up.

## Full Restore

The procedure consists of two phases. The first phase restores the selected directory called **\SYSTEM**. The second phase restores all the contents of the backed-up disk.

The following steps outline how to restore the complete file server:

1. Install the network software according to Novell's installation instructions.
2. LOGIN to the workstation as network supervisor.
3. Invoke the QICstream software.
4. At the Main Menu, choose **Restore**.
5. At the Select File Set To Restore menu, choose the desired file set.
6. At the Select Type Of Restore menu, choose **SELECTED files**.
7. At the Tag Files To Be Restored menu, tag the directory named **\SYSTEM**.
8. At the Select Drive To Restore menu, choose **F**.
9. Answer **No** to the following prompt:  
  
**Do you want to be prompted before existing file(s) are overwritten?**
10. Answer **Yes** to the next prompt:

**Do you want to restore rights & privileges to restored directories?**

11. Answer **Go ahead** to the final prompt:

**I will now begin the restore - are you certain you wish to continue?**

12. Return to the main menu after you see the following message:

**Restore completed successfully**

13. Perform a second restore like the first one, but choose **ALL Files** at the Select Type Of Restore menu.



14. Answer **Yes** to the following prompt:

**Do you want to restore rights & privileges to restored directories?**

15. Restoration of the file server is complete when you again see the following prompt:

**Restore completed successfully**

## **ERROR MESSAGES**

The following QICstream messages may appear while running QICstream with Novell NetWare.

**MESSAGE: Backup completed successfully. Some files were skipped.**

**CORRECTIVE ACTION:** You did not have sufficient privileges to backup the skipped files. The network supervisor needs to allow appropriate access privileges to skipped files.

**MESSAGE: Can't restore file - file destination is locked from update.**

**CORRECTIVE ACTION:** Allow "open" or "write" privileges for the file server directory to which the restore is directed.

**MESSAGE:** File in use by someone else. Skipping...

**CORRECTIVE ACTION:** Wait for the file on the file server to be closed. You should only back up files that are not currently opened by other users.

**MESSAGE:** No access to file press <CR> to continue.

**CORRECTIVE ACTION:** Check the file status. The file on the file server has been erased or renamed, or access rights have changed since the file was tagged for backup.

**MESSAGE:** Restore completed successfully. Some files were skipped.

**CORRECTIVE ACTION:** You did not have sufficient privileges to restore the skipped files. The network supervisor needs to allow appropriate access privileges to skipped files.

**MESSAGE:** Write access denied to subdirectory.

**CORRECTIVE ACTION:** The subdirectory could not be created on the file server because the user lacks write access rights in that subdirectory. The network supervisor has probably changed the rights and privileges of the subdirectory since it was backed up. To restore the subdirectory, the network supervisor needs to restore the original rights and privileges of that subdirectory.

**MESSAGE:** You are not authorized to use this file.

**CORRECTIVE ACTION:** You lack the proper authorization to back up the displayed file. The network supervisor needs to change your authorization before you can back up the file.

## **APPENDIX B**

### **QICstream NETWORKING WITH 3COM**

#### **CAPABILITIES**

QICstream version 1.7 allows you to back up and restore files on a network using 3Com 3+Share software. After a network card driver has been installed in a work station, QICstream detects the presence of a remote logical device and maintains network security during backup and restore operations. Any QICstream operation may be performed with files and directories as long as the user has appropriate access (as defined by 3Com security features).

#### **3Com SOFTWARE REQUIREMENTS**

3Com: 3+Share version 3.04

Interface cards: 3Com and 100% compatible

Hardware: IBM AT/XT and 100% compatibles



## GETTING STARTED

The following steps allow you to use QICstream on the 3Com network:

1. Ensure that the network supervisor has added you as a network user.
2. Use the 3Com protocol to log in to the network.
3. Use the 3F service of 3+Share to link your home directory to a logical device.
4. Start the QICstream program as described earlier in this manual, but do not run QICstream when logged in as the 3Com network administrator.

## SECURITY

Once logged in and linked to a directory structure on a 3Com server, QICstream may access the files and directories permitted by the 3+Share security feature. The sharename and the access rights associated with it determine the rights and privileges a user has to a particular directory.

To back up or restore, ensure you have linked a logical device to a sharename having the appropriate access rights to the desired files and directories. The following access capabilities are necessary for the noted backup and restore activities:

- | Read Access: backup of directories
- | Write Access: restore (overwrite) of directories
- | Write/Create Access: restore of files that do not exist on the file server

## **BACKING UP AND RESTORING**

If you perform a QICstream operation on a file or directory for which you do not have sufficient access rights, an error message is displayed. Refer to the Error Messages section of this appendix for a description of the displayed messages.

QICstream will not backup or restore any subset of the currently linked logical device if the current sharename does not have sufficient access rights.

When attempting to back up a file which is opened by another user for write operations, QICstream pauses a short time for the file to be closed. If the file is not closed within this time, the file is not backed up, and a message is displayed. If you wish to skip the opened file without pausing, press the carriage return key.

### **Files and Directories**

To back up or restore individual files or directories you must link the appropriate sharename to a logical device. This sharename references the desired directories. After you have achieved the link using 3+Share, you then enter the QICstream program and proceed with normal backup and restore operations.

If you are not linked with the proper access rights, the subsequent QICstream events and messages are described in the following Backup and Restore paragraphs.

## **Backup**

You will know that you lack the proper access rights to backup files when the following prompt appears:

**You are not authorized to read this file. Skipping.**

Because of the 3Com security structure, you will not be able to read any other files in this directory. You have two paths of action at this point:

1. If you do nothing, QICstream continues to display this message and skips each file in the file set you are attempting to back up. After all files have been skipped, you will see the following message:

**Backup completed successfully. Some files were skipped.**

2. You may abort the backup while files are being skipped by pressing <CTL>BRK. A QICstream prompt will verify your desire to abort. If you answer NO, you will return to the previous condition of skipping files. If you answer YES, the following message displays the outcome:

**This backup was NOT completed successfully.**

In either case, you may correct this condition by unlinking from the current sharename and linking to the sharename that gives you the appropriate access rights (read).



## **Restore**

QICstream informs you that you cannot restore a file by displaying the following message:

**Can't restore file; file destination is locked from updates**

As with backing up, 3Com security causes QICstream to skip the remaining files in the fileset you wish to restore. You have two paths of action at this point:

1. Allow QICstream to continue skipping the remaining files by pressing the Enter key for each file to skip. After all files have been skipped, you will see the following message:

**Restore completed successfully. Some files were skipped.**

2. You may abort the restore by pressing <CTL>BRK. A QICstream prompt verifies your desire to abort. If you answer **NO**, QICstream returns to skipping files. If you answer **YES**, the following message displays the outcome:

**\*\*\* This restore was NOT successfully completed \*\*\***

In either case, you may correct this condition by unlinking from the current sharename and linking to the sharename that gives you the appropriate access rights ("write" for an overwrite condition when the file already exists; "write/create" for restoring a file that does not exist).



## **Full Backup and Restore of the File Server**

To perform a full backup or restore of a 3Com file server, you must be able to access the root directory of the file server. Only the file server running in concurrent or DOS mode can access this directory.

Tape operations are performed in either concurrent mode, workstation mode, or DOS mode. Only in concurrent mode or DOS mode can you perform a backup or restore of the full file server.

### **Concurrent Mode**

In concurrent mode, the file server operates as a workstation and as a file server at the same time. This allows you to perform a full backup or restore of the file server while the network remains in operation.

However, if you find that you frequently skip files, have all other users log off the network before backing up or restoring.

When operating the file server in concurrent mode, back up or restore the file server by following instructions given earlier in this manual for an individual workstation. You should back up or restore all files on the C: drive. We recommend that you perform a full backup or restore of the file server while operating in concurrent mode.

### **DOS Mode**

Ensure that you are off the network and in the DOS environment. You accomplish this by booting up the

3Com file server computer and then selecting the "Exit to DOS" start option.

Now perform a backup or restore of all the files on the file server, following instructions given earlier in this manual for an individual workstation.

**NOTE:** It is not possible to perform a full backup or restore of the file server while operating in workstation mode. Local QICstream operations in these modes are described earlier in the manual.

## ERROR MESSAGES

The following QICstream messages may appear while running QICstream on a network.

**MESSAGE:** Backup completed successfully. Some files were skipped.

**CORRECTIVE ACTION:** Unlink the logical device you are currently using, and relink the device to a sharename having the appropriate access rights.

**MESSAGE:** Can't restore file - file destination is locked from updates.

**CORRECTIVE ACTION:** If the file exists, link to a sharename with write privileges. If the file does not exist, link to a sharename with write/create privileges.

**MESSAGE:** File in use by someone else. Skipping...

**CORRECTIVE ACTION:** Wait for the file on the file server to be closed. Only back up files unopened by other users.

**MESSAGE:** No access to file press <CR> to continue.

**CORRECTIVE ACTION:** Check the file status. The file on the file server has been erased or renamed, or access rights have changed since the file was tagged for backup. Also check for proper DOS file attributes.

**MESSAGE:** Restore completed successfully. Some files were skipped.

**CORRECTIVE ACTION:** Unlink the logical device you are currently using, and relink the device to a sharename having the appropriate access rights, or ensure that the skipped files are not opened for write by other users.

**MESSAGE:** This backup was NOT completed successfully.

**CORRECTIVE ACTION:** Unlink the logical device you are currently using, and relink the device a sharename having necessary access rights.

**MESSAGE:**

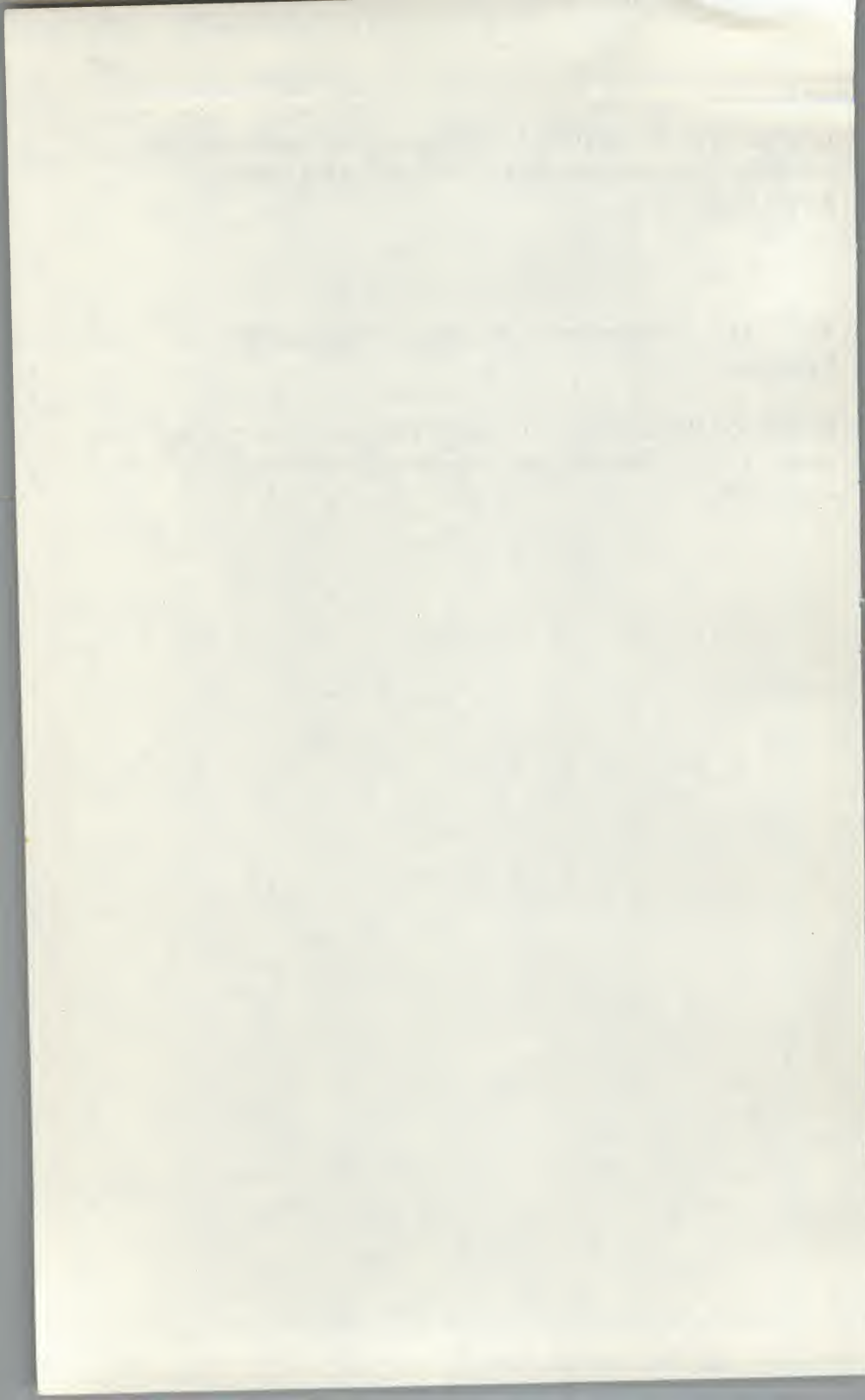
\*\*\* This restore was NOT successfully completed \*\*\*

***CORRECTIVE ACTION:*** Unlink the logical device you are currently using, and relink to a sharename having necessary access rights.

***MESSAGE:*** You are not authorized to read this file.  
***Skipping.***

***CORRECTIVE ACTION:*** Unlink the logical device you are currently using, and relink to a sharename with the necessary access rights.





Compatibiliteitstabel getoetste Data Cartridges									
DC2000	DC2000	DC2110	DC2000	DC2080	DC6000HC/615HC				
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721131	89,-	84,55	83,15	83,15	721131	89,-	84,55	83,15	83,15

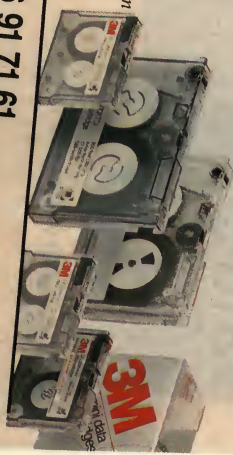


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DC6000A	600'	60	7245-5	78,10	74,20	DC6000A	600'	60	7245-5
DC6150	600'	60	7245-5	78,10	74,20	DC6150	600'	60	7245-5
DC6250	600'	150	7223-5	59,40	56,55	DC6250	600'	150	7223-5
DC6320	1020'	250	7276-5	67,50	64,15	DC6320	1020'	250	7276-5
DC6825	620'	320	7252-5	80,55	76,50	DC6825	620'	320	7252-5
DC100A	1020'	525	7253-5	103,50	98,35	DC100A	1020'	525	7253-5
DC1000	140'	0,67	-	-	-	DC1000	140'	0,67	-
DC2000	185'	20	-	-	-	DC2000	185'	20	-
DC2080	250'	40	7278-5	44,55	42,30	DC2080	250'	40	7278-5
DC2120	205'	80	7254-5	59,50	56,55	DC2120	205'	80	7254-5
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